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IS 11784 (1986): Carbaryl lindane granules [FAD 1:
Pesticides and Pesticides Residue Analysis]



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IS : 11784 - 1986

Indian Standard
SPECIFICATION FOR
CARBARYL LINDANE GRANULES

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Indian Standard

SPECIFICATION FOR CARBARYL LINDANE GRANULES

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**AMENDMENT NO. 1 MAY 1993
TO
IS 11784 : 1986 SPECIFICATION FOR CARBARYL
LINDANE GRANULES**

(Page 4, clause 2.1.3) — Substitute the following for the existing matter:
'Blank granules used shall be of sand, conforming to IS 9666 : 1980†.'

(FAD 01)

Reprography Unit, BIS, New Delhi, India

**AMENDMENT NO. 2 JULY 1994
TO
IS 11784 : 1986 SPECIFICATION FOR CARBARYL
LINDANE GRANULES**

(Page 4, clauses 2.2.5 and 2.2.4.1) — Delete.

(Page 6, clause 4.1) — Substitute the following for the existing:

'When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause 2.3.1 of the standard.'

(FAD 1)

Reprography Unit, BIS, New Delhi, India

**AMENDMENT NO. 3 FEBRUARY 2000
TO
IS 11784 : 1986 SPECIFICATION FOR CARBARYL
LINDANE GRANULES**

(Page 5, clause 2.3.1, first para, line 2) — Substitute 'Indian Standards shall be referred to Amendment No. 1 of IS 882 : 1984' for 'Appendix A of IS : 7539 - 1975*.'

(FAD 1)

Reprography Unit, BIS, New Delhi, India

**AMENDMENT NO. 4 MAY 2002
TO
IS 11784 : 1986 SPECIFICATION FOR CARBARYL
LINDANE GRANULES**

(*Amendment No. 3, February 2000*) — Delete and substitute the following for existing:

(*Page 5, clause 2.3.1, para 2, line 2*) — Substitute the words 'Amendment No. 1 to IS 882 : 1984' for 'Appendix A of IS 561 - 1978'

(FAD 1)

Reprography Unit, BIS, New Delhi, India

Indian Standard
**SPECIFICATION FOR
CARBARYL LINDANE GRANULES**

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 14 August 1986, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

0.2 Carbaryl lindane granules are used for control of agricultural pests.

0.3 Carbaryl lindane granules are generally manufactured to contain 4 percent (*m/m*) of carbaryl and 4 percent (*m/m*) of *gamma* isomer of lindane.

0.4 In the preparation of this standard, due consideration has been given to the provisions of the *Insecticides Act*, 1968 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these rules, wherever applicable.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS:2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for carbaryl lindane granules.

2. REQUIREMENTS

2.1 Constituents — The granules are manufactured from premix containing carbaryl technical and *gamma* isomer as active ingredients together with suitable carrier(s) with binder(s), stabilizer(s) and/or other formulants.

*Rules for rounding off numerical values (*revised*).

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2.1.1 Carbaryl, technical employed in the formulation of this material shall conform to IS: 7539-1975*.

2.1.2 Lindane used in the formulation of this material shall conform to IS: 882-1984†.

2.1.3 Blank granules used shall be of china clay, conforming to IS: 9666-1980‡.

2.2 Physical — The material shall comply with the physical requirements specified in 2.2.1 to 2.2.5.

2.2.1 Description — The product shall consist of dry, free flowing granules, free from visible extraneous matter and dust except for the amount specified (see 2.2.3). It may contain added colouring matter.

2.2.2 Sieving Requirements — Not less than 97 percent of mass of the product shall pass through a test sieve having a mesh size of the upper declared limit and not more than 5 percent by mass of the product shall pass through a test sieve having a mesh size of lower declared limits when determined by the method described in 12.1 of IS: 6940-1982§.

2.2.2.1 — The ratio of lower to upper limit of sieve sizes given under 2.2.2 shall not exceed 1 : 3.

2.2.3 Dust — When determined by the method described in 12.1 of IS: 6940-1982§, not more than 1.0 percent by mass of the product shall pass through 75-micron IS Sieve [(see IS: 460 (Part 1)-1978||)]. The material retained on the sieve shall comply with the requirements of 2.3.1.

2.2.4 Storage Stability

2.2.4.1 Heat stability — After storage at $54 \pm 2^{\circ}\text{C}$ for 24 hours, the product shall continue to comply with the requirements of 2.2.1 to 2.2.3, 2.3.1 and 2.3.2.

2.2.5 Moisture Content — When determined by the method prescribed in 4 of IS: 6940-1982§, the moisture content of the material shall not exceed 4.0 percent by mass.

2.3 Chemical — The material shall comply with chemical requirements specified in 2.3.1 and 2.3.2.

*Specification for carbaryl, technical.

†Specification for lindane (*first revision*).

‡Specification for blank granules.

§Methods of test for pesticides and their formulations (*first revision*).

||Specification for test sieves: Part 1 Wire cloth test sieves (*second revision*).

2.3.1 Carbaryl Content — When determined by the method prescribed in Appendix A of IS:7539-1975* the observed carbaryl content, percent (m/m) of any of the samples shall not differ from the nominal value by more than the percent tolerance applied to the declared nominal value as given below:

<i>Nominal Value, Percent</i>	<i>Tolerance Limit</i>	
Up to 9	+ 10 - 5	} percent of the nominal value
Above 9 and below 50	\pm 5	
50 and above	+ 5 - 3	

Gamma Isomer Content — When determined by the method prescribed in Appendix A of IS:561-1978† observed *gamma* isomer content, percent by mass (m/m) of any of the samples shall not differ from the nominal value by more than the percent tolerance applied to the declared nominal value as given below:

<i>Nominal Value, Percent</i>	<i>Tolerance Limit</i>	
Up to 9	+ 10 - 5	} percent of the nominal value
Above 9 and below 50	\pm 5	
50 and above	+ 5 - 3	

2.3.1.1 The actual value of carbaryl content and *gamma* isomer content in the formulation shall be calculated to the second decimal place before applying tolerances given in 2.3.1.

2.3.1.2 The average content of carbaryl and *gamma* isomer taken in all the samples shall not be less than nominal declared value individually.

2.3.2 Acidity or Alkalinity — When tested by the method prescribed in 11.3 of IS:6940-1982‡ the acidity (as H_2SO_4) or alkalinity (as NaOH) of the material shall not be more than 0.5 percent by mass.

*Specification for carbaryl, technical.

†Specification for BHC (HCH) dusting powders (*fourth revision*).

‡Method of tests for pesticides and their formulations (*first revision*).

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3. PACKING AND MARKING

3.1 Packing — The material shall be packed as per specific requirements given against SI No. (ii) of Table 4 in IS:8190 (Part 1)-1980*. The container shall also comply with the requirements given in 2 of IS:8190 (Part 1)-1980*.

3.2 Marking — The container shall bear legibly and indelibly the following information and any other information as is necessary under *Insecticide Act* and Rules:

- a) Name of the material and particle size (*see 2.2.2*);
- b) Name of the manufacturer;
- c) Date of manufacture;
- d) Batch number;
- e) Net mass of the contents;
- f) Nominal carbaryl content and *gamma* isomer content, percent (*m/m*); and
- g) The cautionary notice worded as in the *Insecticides Act* and Rules.

3.2.1 The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 Representative samples of the material shall be drawn as prescribed in IS: 10627-1983†.

*Requirement for packing of pesticides: Part 1 Solid pesticides (*first revision*).

†Method for sampling of pesticidal formulations.

5. TESTS

5.1 Tests shall be carried out by the appropriate methods referred to in 2.2.1 to 2.2.5, 2.3.1 and 2.3.2.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS: 1070-1977*) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

*Specification for water for general laboratory use (*second revision*).

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